

TRANSLATION OF ANNEXES TO THE  
INTERNATIONAL PRELIMINARY EXAMINATION REPORT

1. Pump (1) comprising at least one shield valve controlled by a  
5 conveyed medium and which has a valve disk (4) of flexible material,  
which is clamped in a central region and is movable between an open  
position and a closed position, in said closed position the valve disk (4)  
closes at least one valve opening (9), **wherein** extensions (11) project  
10 from the valve disk (4) in step form for preventing a sudden flat  
abutment of the valve disk on a valve abutment surface and/or for lim-  
iting a valve opening motion and wherein the valve disk (4) is con-  
nected by at least one of the step-shaped extensions (11) to a sealing  
ring (13) surrounding the valve disk (4) and clamped between two  
housing portions (5, 6).

15 2. Pump according to claim 1, wherein the plurality of extensions (11)  
project generally uniformly from a peripheral edge of the disk.

3. Pump according to claim 1 or 2, wherein the valve abutment surface  
20 (10) has an approximately conical shape.

4. Pump according to one of claims 1-3, wherein a central region of the  
valve disk (4) is centered by a pin (7) which passes through a central  
perforation (8) of the valve disk (4).

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5. Pump according to one of claims 1-4, wherein the at least one extension (11) connecting the valve disk (4) and the sealing ring (13) extends at least sectionally transversely to the disk radius and runs in a spiral form.

6. Pump according to one of claims 1-5, wherein at least one gap (14) acting as a passage opening is provided between the sealing ring (13) and the valve disk (4).

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